

A LIST OF THE
MAMMALS OF MANITOBA

BY
ERNEST E. THOMPSON,

Formerly of Cambridge, and a Corresponding Member of the Society

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MAMMALS OF MANITOBA

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No. 1.—Head of Jumping Deer (*Cervus macrotis*).
Shot near Carberry, December, 1886.

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THE MAMMALS OF MANITOBA.

The following paper consists chiefly of the field notes of the writer, although in some instances quotation has been made from Richardson's "Fauna Boreali-Americana," and other accredited sources, with a view to rendering the list as complete as possible.

Specimens of the smaller species, with few exceptions, have been submitted to Dr. C. Hart Merriam, who is responsible for the identifications and for the nomenclature employed. Of the exceptions, *Tamias asiaticus borealis* and *Neosorex palustris* have been determined by Dr. J. A. Allen. *Hesperomys leucogaster* has not been taken in Manitoba, but is included because it has been recorded from northern Dakota, near the boundary line.

The Ojibbeway names were given me by A-nim-i-kong (Little Thunder) a Lake of the Woods Indian: Albert Chief, a half-breed of Rat Portage, acting as interpreter. The Cree names were given by Mr. Hector McKenzie of Winnipeg.

The alphabet used in recording these is that of the Bureau of Ethnology at Washington.

Order UNGULATA. (Hoofed Mammals).

Family CERVID.E. Deer.

1.—The JUMPING DEER or MULE DEER (*Cervus macrotis*. Say).

Cree:—A-pi-tci-mu-sis. Small moose.

This is the common deer of Manitoba. It is a larger and heavier animal than the Virginian Deer, and is also distinguished by its short, black-tipped tail, its very large ears, and by having a marked bifurcation in the beam of the antler. The usual form of its antlers is seen in the frontispiece, and this peculiar double fork is so commonly emphasized as a marked characteristic of the species that I was somewhat surprised to find on comparing a series of specimens of *macrotis* with a number of *virginianus* that a complete intergradation of form was exhibited. One of the Mule Deer sets was formed so exactly on the Virginian Deer model, and likewise the animal had such small ears, that I was not surprised to hear some sportsmen pointing it out as distinct from the *macrotis*, especially as several similar heads were available to shew that it was not an isolated case of variation. The ears of this specimen were each 8 inches in length, while those of a smaller, typical specimen from the same region were each 10½ inches.

It will be seen that the ears of this species are of exceptional size, and it is from this circumstance that it derives the name of Mule Deer.

Its range is briefly generalized in the phrase "Central North America," and in Manitoba, more specifically, all specimens observed by me were from the valleys of the Assiniboine and Red River.

The species manifests a decided preference for the dry woods and half-open country, avoiding the high sandhills and the damp bottom lands as well as the open prairie.

The doe produces two or sometimes three fawns at a birth, and these, as in most deer, are at first beautifully marked with white spots on a brownish buff ground. Their voice is a peculiar squeal and bears no resemblance to the bleat of a sheep or lamb. After their birth the mother appears to follow the common habit of the family and hides them in some copse until they are able to follow her about.

This deer seems to be less shy than most of the family, for when a hunter chances on a locality where it has not been much disturbed, he may often have a herd of the species stand within easy range and gaze innocently at him for some minutes. If at length their inspection renders them suspicious, they will trot off some distance, and if further alarmed, they immediately begin to run with that remarkable bounding action that has bestowed the first mentioned of the common names. During this peculiar run the legs are rather rigidly set, and the impetus appears to be given by an effort of the feet only, and yet from five to eight yards are covered at each bound. To the eye this pace is the perfection of ease and grace, but it is really very laborious, and a sustained run of a few miles will usually tire out the strongest Jumping Deer.

When one of these animals is wounded or exhausted it commonly makes for some retreat in the densest woods, and there lies down in fancied security. It is customary then for the hunter to leave it for a few hours, to stiffen if wounded, or to recover from its fright if unhurt, after which it is a much more easy matter to make a successful approach.

In hunting the Mule Deer much the same means are employed as in the pursuit of the better known Virginian species, though I am disposed to believe that the latter is more wary and also more difficult of approach on account of the localities it frequents. The excellence of the venison and the value of the skins of these two species, as well as the noble sport afforded by the hunt, have all conduced to render their pursuit one of the most fascinating of field recreations. Of the lawful modes of killing them, hounding and still-hunting are most in favor. The still-hunt is the only method that I myself have seen practised with the Mule Deer, but I am informed that hounding has recently been tried in our province.

To hound successfully the hunter must know the country and the runways. For when pursued, the deer usually keep to certain paths or routes, and it is the hunter's policy to lie in ambush in one of these while the hound drives the flying game. As soon as he sees it nearing his retreat, the hunter either shoots on the fly or, by giving a short whistle, causes the animal to stop and listen, and then he has himself to thank if the fatal bullet does not find its billet.

But the still-hunt is the true sportsman's method, for he must rely on himself alone, and to succeed must combine in himself no little perseverance and woodcraft, as well as pure physical endurance. He usually sets off alone on the trail of a deer; it has a fair chance; he meets its strength with strength, its cunning with cunning, and its speed with perseverance. Partly by a sort of instinct and partly by signs, he follows the trail. Guided by marks which to the tyro are unnoticeable, he accurately gauges his proximity to his prey, and when at last he knows that the animal cannot be more than a few hun-

dred yards away, he must prove himself as keen of sense and as stealthy of movement as a veritable beast of prey—for this is the crucial moment, and a trifle may crown or crush his hopes. Slowly, cautiously, he closes in, until at length his quick ear catches the light rustle of brush and his keen eye sights the patch of hair through the branches. Now all depends on the sure, steady aim of his rifle, and in another moment his prey either is won, or is flying fast and far, and away beyond the reach of another messenger of lead.

The head represented on the cover is that of a Jumping Deer (*Cariacus macrotis*), shot near Carberry, December, 1886.

2—COMMON OR VIRGINIAN DEER. (*Cariacus virginianus*. Bod.)

This Deer has also been called "Fallow Deer," "Down East Red Deer," "Long-tailed," and "White-tailed Deer," and "Common Red Deer." But as the last name has also been applied to the Wapiti, and the first does not belong here at all, much confusion will be avoided if we drop both in the present connection.



No. 2.—Antlers of Virginian Deer.

It may be distinguished from the Jumping Deer by its smaller size, smaller ears, and by its tail, which is very long and pure white throughout the under surface. When bounding away in alarm, the animal usually holds the tail aloft, and it then, in conjunction with the white patch on the buttocks, becomes a very conspicuous object as it is seen dancing away among the trees. This white flag, as the hunters call it, is probably intended to assist the fawns in keeping sight of the dam when pursued and endeavoring to escape by flight.

Though the habitat of the species is comprehensively "all of North America, except the extreme north," the Virginian Deer is far from being common in our Province. Three specimens are all that have come under my notice, and these were taken on Pembina Mountain. They were in the possession of Mr. Hine, the well-known taxidermist of Winnipeg, and this gentleman informs me that during his six years residence in the country he has seen but nine or ten specimens, and all of these were brought from the country about the Pembina Mountain.

The sketch prefaced represents a pair of typical *virginianus* antlers from near Lake Simcoe. They are now in the possession of Dr. Brodie, of Toronto.

3.—ELK OR WAPITI. (*Cervus canadensis*. Erx.)

Cree:—Wa-pi-ti.

To the Hudson's Bay Company's employes the Elk is known as the Wapiti, Red Deer, or Stag, but as the use of the last two names would cause considerable confusion, they will not herein appear. The Wapiti or Elk is probably the largest of the family that bear branching antlers, and in size and

grandeur is second only to the Moose of all the Cervidæ. A full-grown buck will usually stand from four and a half to five feet at the shoulders, and will weigh between 500 and 600 pounds. The female is smaller than the male, but is nevertheless a magnificent animal. The general color is chestnut, darkest on the head and limbs, and on the rump suddenly changing into dull white. The antlers constitute the most striking feature of the species, for it is probable that they exceed in size those of any other living deer. As with most of the family they are the distinguishing ornaments of the male. A good idea of the Elk's general appearance and carriage may be gathered from Landseer's celebrated pictures of the Scottish Red Deer, a species almost exactly a miniature of the lordly animal under consideration.

At one time the Elk was of general distribution in temperate North America, but its territory has been greatly diminished of late, its chief strongholds, at present, being the foot-hills of the Rockies and the valley of the Yellowstone. In the Northwest Territory, I am informed that it is found as far north as the Liard river, and the number of lakes, rivers and creeks which are named "Red Deer," after this animal testifies to the universality of its distribution in this region.

In Manitoba it may still (1886) be considered an inhabitant of the Red and Assiniboine valleys in general, but it does not appear to exist in large numbers anywhere but in the Pembina Mountain.

The cast off antlers of the species, however, are in some localities only less plentiful than the bones of the Buffalo, and testify to its former abundance. The circumstance that these antlers are found chiefly on the high hills, Dr. Grinnell (of "Forest and Stream") explains by the fact that the annual shedding takes place in the winter when the depth of snow in the valleys compels the Elk to frequent the comparatively bare elevations.

Among the large number of Elk horns in Mr. Hine's warehouse, are several unusually fine sets; of these, three pairs measured 11 inches around the base of each antler above the burr; one $11\frac{1}{4}$; and one $11\frac{1}{2}$ inches. A deformed head shewn me by Mr. F. W. Stobart, was curiously decorated with three distinct antlers, only one, however, was perfect in form and size.

A marked peculiarity of this species and one which in part induced Judge Caton to recommend it for domestication, is its ability to live on the veriest garbage. According to the authority named, any and every vegetable substance is pleasing to its palate. It eats, with apparently equal relish, hay, moss, grass, browse, twigs, sedge or leaves; it is the most omnivorous of deer, and will subsist and even fatten amid bleak sand-hills where ordinary cattle, or almost any other ruminant would starve.

4.—MOOSE. (*Alces americanus*. Jardine).

Cree:—Müs. Ojib.:—Müz.

This magnificent deer equals or exceeds a horse in stature, if not in weight, for an adult male is usually six feet in height at the shoulders, eight to nine feet in length from the snout to the tail, and weighs between 700 and 900 pounds. The female averages less, though often it also exceeds the dimensions given. These figures, I am aware, are far below the guesses of enthusiastic sportsmen, which will often add at least 25 per cent. to each of the items given, but those are probably fair averages. Nevertheless, we must

not brand as total untruths the stories one occasionally hears from hunters, of seven foot, thousand-pound moose, for the eminent authority, Judge Caton, is of the opinion that specimens have been killed weighing nearly 1,400 lbs., and such would in all likelihood be at least seven feet at the shoulders.

The largest moose head I have ever seen is that in the possession of Mr. Cummings, of Winnipeg. The antlers measure 57 inches from tip to tip, each is 33x25 inches across the palmation, and the estimated weight of the pair is 50 pounds. I would venture the opinion that the animal they belonged to was considerably over six feet at the withers.



No. 3.—Head of Moose.

From specimen in possession of Mr. S. S. Cummings, of Winnipeg.

The neck of the Moose is about a foot long, and of necessity very thick and strong to carry the weighty antlers. This lack of attenuated grace, combined with the peculiar muzzle and long limbs, has moved many writers to a volley of raillery at what they style the grotesque and ungainly appearance of the animal. But I do not hesitate to aver that no one who has studied the living Moose without prejudice will for a moment champion any such sentiments. On first sight it is bound to look strange, but so does the Elephant

and, like that animal, the Moose, though devoid of the airy grace that distinguishes our smaller deer, is possessed of a beauty that manifests itself in perfect adjustment, and of a majesty that is inseparable from vast size and strength.

The Moose was at one time an abundant species in nearly all the wooded regions of the higher latitudes, but at present its range is much less extensive, and it is found in great numbers only about the south of Hudson's Bay, and in the region north of Great Slave Lake. In Manitoba it is sparingly distributed wherever the locality is congenial. But it may be described as plentiful in the Duck and Riding Mountains, and in the low country about Lake Manitoba.

Usually the Moose is found inhabiting the lowlands, where dense woods are alternated with swamp and damp thickets of birch and willow, finding in such localities at once security from its natural enemies and an abundance of the browse and tender twigs on which it principally subsists, while its great length of limb and its wide-spreading hoofs enable it to cross with safety the most treacherous of bogs, such even as would inevitably engulf and destroy any ox or horse that might venture upon them.

When the winter closes in, it usually quits the solitary roving life it led during the summer, and in company with a small number of its kind settles down in some sheltered locality where browse and *equisetum* are sufficiently abundant to furnish provender for some time. In such a locality they will remain as long as the food holds out. If, however, the herd receives the slightest intimation of approaching hunters, be it only the far away crack of a stick, or even a suspicious taint on the wind, they immediately set off at full speed and maintain their swift trot for several miles, toward some more remote haunt, where again they settle, but are more than ever watchful and

ready to fly on the slightest appearance of danger. During a retreat of this kind, according to my observations, the animals run in a line, single file, and each treads in the track of the one before, so that in many places only one trail appears.

My own notes on this species were made chiefly in the spruce bush at Carberry, where, in the fall of 1884 Mr. James Duff and myself killed a bull moose, that is worthy of notice on account of its rather anomalous condition. It was apparently very old, as the "bell" on the throat was $16\frac{1}{2}$ inches long, including the hair, which was three inches in length; and yet the antlers were the smallest I ever saw on an adult, and one of them was curiously malformed.

The localities affected by this deer are also frequented by the Wis-ka-tjan or Whiskey Jack (*Perisoreus canadensis*), and on the only occasion when I came near a herd of moose feeding, the warning and melancholy notes of the bird preceded the retreat of the shy browsers, and appeared to be a notification of danger to them. So that there may be some good reasons for this jay's name of Moose-bird.

The value of this animal's carcass for food, and the high quality of leather manufactured from its hide, combined with the great difficulty attendant on its pursuit, have rendered the Moose the most celebrated object of the chase in America. Its powers of scent and hearing are unexcelled; its wariness and cunning are proverbial; so that one who is a successful moose-hunter is acknowledged to have attained the acme of woodcraft. The account of a single moose-hunt will serve to illustrate at once the wariness of the animal and the method of hunting it. The incident was related to me by Ka-limac, the hunter who figures as the principal. He had received information that a fresh moose track had been seen within a mile or two of his shanty, but as there was then no wind he knew that it would be useless to give chase. However, a gale sprang up during the night, and before day-break he had bound on his snow-shoes and started off towards the place where the recent signs had been observed. The track was nearly obliterated by the drifting snow, but it became more distinct as he advanced into the deeper woods. For some time he silently and swiftly strode on the trail, until at length it became evident that the moose could not be more than one or two hours ahead of him. He now left the trail, and, proceeding with more caution, made a wide loop or detour to the leeward, and on again coming round to find the trail still ahead of him, he repeated the manœuvre; and again and again with the utmost caution and watchfulness, until at length after half a dozen loops he came to a small plain. He cautiously made a circuit around this, and as he failed again to "pick up" the trail, he knew that the moose was somewhere within the last detour. With redoubled caution he now retraces his steps to where last he had left the tracks. Here he lays aside his snowshoes, his belt, his overcoat and everything that might rustle on the twigs or cause the slightest sound as he creeps through the thickets. He now proceeds to follow the trail, keeping as far off to the leeward as possible, without losing sight of it. All his former caution is like heedless crashing through the brush, when compared with his present tactics. Each foot is carefully raised, brought forward, and wriggled downward until it reaches the solid footing beneath the snow; then warily the footing is tested before trusted, lest it be on some treacherous stick whose crack on breaking would be sufficient to set the moose off on a twenty mile run, and thus in a

moment nullify the result of his past labor, and end all chance of ultimate success. Soon it is evident that the moose is in the patch of willows which stands isolated on the plain. Into this he makes his way with painfully labored steps, each being followed by a long suspense of listening and watching. In this way he has worked nearly around the thicket without sighting the object of his pursuit, and begins to fear that the animal has slipped quietly away, when suddenly his eye catches a slight twinkle of something in the scrub far on ahead. He watches and waits until the sign is repeated; and now he feels his blood rush, for it was the ears of the moose that moved, and the animal is lying in the cover unconscious of the hunter's approach. But there is no chance to shoot from where he is; he must go round to some other point; and after another half-hour of agonizing crawling he once more stands where he can see the great ears. He cocks his rifle, plants his feet, and is ready. With one hand he then snaps a small twig, and in an instant the giant deer is on its feet and in full view. 'Crack!' and when the smoke is gone no moose is to be seen. With mingled feelings of hope and fear he crosses over to the trail, and in an instant his heart is bounding with exultation, for now at every stride he sees a splash of blood. He hurries back for his snowshoes and coat, and then hastens after the moose. Soon he comes up with it, and finds it sorely wounded and disposed at once to attack its foe; but again the rifle plays its part, and the noble animal sinks dying in the snow.

The presence of two or three feet of soft snow appears to be a very slight impediment to the long, thin shank of the Moose: but when there is a crust the case is different, for then the hunter, mounted on snowshoes, has the poor beast at his mercy, and often, I almost said usually, yields to the temptation to kill far more than he really requires. As the chance for this sort of sport occurs only in late winter or early spring, when the meat is in very poor condition, and as the beast is totally helpless, the whole affair is contemptible in the extreme.

In curious contrast to the habitual wariness of the Moose, is the fact that it has frequently been approached when asleep, although the hunter was taking no precautions to make his approach noiselessly. Mr. W. Clark, of the H. B. Company's service in Winnipeg, related to me the following: "I was crossing the wooded country between Lakes Manitoba and Winnipeg in the early spring. I had with me an Indian and a dog team with a loaded sled, besides a couple of hounds running loose. The dogs were being driven with the usual amount of shouting and noise, and this was increased as we came to a difficult hill. On the hill was a tall spruce, and as there was no trail, the Indian climbed it to ascertain the best route. When he was at the top we held a conversation in tones commensurate with the distance between us. Just after he came down, the dogs, that were beating about, chanced into a thicket close by my station, and with a great uproar put up two moose that had evidently lain there asleep through all the clamour of our travelling and shouting. Of course no gun was handy, so they got away; but we turned loose the train dogs, the whole pack taking after the bull, and afterwards we succeeded in running him down and killing him."

The flesh of the Moose is a staple article of diet in the Northwest Territory, and is considered quite as nutritious and palatable as ordinary beef, while the muscle or gristle of the snout, and the tongue are esteemed among the greatest delicacies. Its hide affords the best leather in use for moccasins

and hunting coats, and the long bristles of the mane are dyed by the Indian squaws, and worked into a variety of embroidery patterns, for moccasins, fire-bags and other articles of dress or ornament. The great strength of the Moose combined with its swiftness and tameableness, has induced several writers who have studied the subject to recommend the species as a draught animal. And as the experiment is being made by Mr. Bedson, of Stony Mountain, a brief account of a bull moose that was broken to harness will form a suitable close to this article.

The animal in question was owned by Mr. B. S. McLean, of Ottawa, and the account given is from information supplied by the gentleman himself. The moose came into his possession when it was about nine months old. It soon became quite tame, and readily learned to come when called. It was fed on browse and twigs at first, but experience showed that it thrived as well or better when supplied with bread for a change, and later, when thoroughly broken, it was found advisable to train it on clover and oats, when preparing it for a race or a long journey. Its habitual action when travelling was a long swinging trot, though it sometimes paced for a short distance, and on rare occasions varied the movement with a long "lope;" but at all times the action was clean, neat, and wonderfully smooth. Its speed for a short distance was almost incredible: thus, for a quarter of a mile, it could beat all horse records: its best time for half a mile was one minute 5½ seconds, but the animal lacked bottom, and was not so completely under control that it could be induced to keep up its best speed for a mile or even to keep the track for that distance.

When urged to greater speed while in harness, it usually began screaming and roaring in a rather startling manner, whilst its glowing eyes and bristling mane gave evidence of a wild nature but little changed by its barnyard bringing up. Its only mode of attack appeared to be by striking with the fore feet; but the terrible force of the blows it could so deal, showed that it required no other means to defend itself against its natural enemies. It was remarkably fond of playing and swimming in the water, but was very dangerous to boats or canoes if such chanced to come near, as it usually gave chase in a sportive manner, and did its utmost to injure or sink them by repeated blows from its hoofs. Compared with other moose this one was remarkably heavy bodied and short legged, which may, in a measure, account for its lack of staying power. As it grew older it became more vicious; and when four years old it had to be killed; it then stood about 17 hands high at the shoulder.

5.—WOODLAND CARIBOU. (*Rangifer saribou*. Kerr).

Cree:—A-tik'. Ojib. :—At-tik'.

In size this animal is midway between the Virginian Deer and the Elk. Its general color is a dirty white, shaded into chestnut on the head and legs, and suddenly becoming white again just above each hoof. Its chief anatomical peculiarities are the long, slender, palmated horns—often present in the female—its entirely hairy muzzle, and its large, spreading feet, which often have the "clouts," or accessory hoofs prolonged so that they touch the ground.

The few Manitoban specimens that I have seen were brought from Lake Winnipeg and the country about Lake of the Woods. I never met with it

myself, and have no original information to offer. I may, however, repeat the statement of a hunter with regard to the proportion of females that have antlers. He informed me that all the does have them after a certain age, about the fourth or fifth year, and I must say that the statement looks very like the truth.

Attention has more than once been directed toward this species as one suitable for domestication. That there is need for such an animal is sufficiently attested by the act that in the vast region to the north the only draught animal is the dog, which, while it is much more expensive to keep than the deer would be, is much less efficient; totally useless during half the year, and affords no useful product after death. As the Caribou is practically the same as the Reindeer of Lapland, the idea is perfectly practicable. Mr. Alexander Macarthur, of Winnipeg, brought the subject into notice some four years ago by an admirable paper. There was no one to deny that the Reindeer can go twice as far in a day as a dog, and with thrice the load: besides it can feed itself, and is, dead or alive, a source of profit as food. The idea was favorably entertained, and the necessary capital sub-

No. 4.—Head of Caribou from Lake Winnipeg.

scribed to secure a few domesticated reindeer from Sweden. But it chanced that the time of year was not just then the most favorable for the importation, so that prudence dictated a few months' delay. During that time interest in the project subsided, nothing further was done in the matter, and finally the capital was redistributed.

The sketch prefaced is from a specimen in the possession of Mr. Hine.

Family ANTILOCAPRIDÆ. Prong-horn Antelope.

6.—ANTELOPE, CABRIT, OR PRONGHORN. (*Antilocapra americana* Ord.).

Cree:—A-pi-tci-a-tik—Small Caribou.

It is very doubtful if this animal is still to be found in Manitoba, although until recently it was reported as occasionally seen by settlers on the Plains of the Souris. I have no original information to offer relative to its history, but for the benefit of Nor'west Canadians, present a few facts bearing on its curious anatomy; my source of information being Judge Caton's well known book.

Its eyes are celebrated for their size and lustre, and its feet are peculiar in bearing but two hoofs each, the accessory pair being absent. Its horns, however, are the most unique part of its anatomy. They resemble those of a goat in being formed of true horn on a bony core, and they are like the antlers of a deer in being branched and deciduous. The bony core on which the horn is fixed is terminated just below the prong. After the fall rut the new horn begins to grow at the top of the core inside the old horn until by its growth it lifts and tears the latter from its fastenings, and it is

dropped. The new horn continues growing upwards until it branches, and is terminated in a hook, and downwards until the core is completely encased in horn down to the skull. This curious process is repeated every winter, yet the successive horns exhibit but little change after the animal has attained to maturity.

Its fleetness and wariness would in most cases baffle all pursuit, were it not for its remarkably inquisitive disposition. For the experienced hunter takes advantage of this weakness and decoys the animal within range by remaining unseen, and at the same time waving a handkerchief or other object, in plain view. The antelope is usually alarmed at first, but circles about nearer and nearer, until within easy reach of the rifle, and then pays with its life for its curiosity.

Family BOVIDÆ. Cattle.

7.—BUFFALO. (*Bison americanus* Gmelin).

Cree:—Mus-tus. Ojib.:—Muc-kwi-té-pij-i-ki=Prairie Horned-beast.

The Buffalo is now to be regarded as a Manitoba species on the strength only of the herd kept by Mr. S. L. Bedson at Stony Mountain. Without wasting any time over the oft told tale of the extermination of the wild Buffalo in the Northwest, I will briefly describe the domesticated herd already mentioned.

In 1878 some Indians, returning to Winnipeg from the west, brought with them five buffalo calves. These became the property of Mr. James McKay, and were allowed to run about the outskirts of the town until 1882, when the herd, now numbering 23, came into the possession of Mr. Bedson, by whose courtesy I was enabled to gather the following information.

At the present time (January, 1885), the herd numbers 41: of these, nine are half-breeds with the common neat cattle; six are three-quarter bred; and the rest, pure Buffalo. The object of domesticating these beasts is to provide an animal better suited to the requirements of the Northwest than the common animal, for notwithstanding a story oft told to the eager immigrant, the latter species must be housed and fed during the winter, and on the ranches a number fall annually a prey to frost, famine, drought or disease.

On the other hand, the tame buffaloes referred to have never exhibited the slightest symptoms of disease. Of the number that have died, one or two have been butchered, one old bull fell from a height and broke his neck, and the rest have been shot by malicious persons.

And yet this herd receives no care beyond what is necessary to prevent them wandering away or being stolen. They live on the open prairie, summer and winter, subsisting entirely on the wild grass, even when they have to dig for it through one or more feet of snow. Nor is it a mere existence that they so maintain; for when I saw them late in January they were finding grass enough, not merely to feed, but to fatten them. When a blizzard comes on they lie down close together with their backs to the wind and allow the snow to drift over them, so that under the combined protection of the snow and their own woolly coats they are perfectly comfortable. In January, 1884, one of the cows calved in the open prairie, and though at the time the thermometer registered thirty-eight degrees below zero, neither cow nor calf appeared to suffer the slightest inconvenience.

In view of these facts, I think no one will deny the immensely superior hardihood of the Buffalo when compared with the neat cattle; and a comparison of the material productions of each will not prove seriously adverse to the former.

The hide of the common beast is worth about \$1.50, as a robe it is worthless. The robe of an average buffalo is worth about \$10, and we must remember that it has already established its position as an indispensable wrap in our northern climate; also that as we push our civilization further to the north and west the demand will increase; and what is there to offer in its place if the supply gives out?

Once a year the Buffalo sheds its fleece, scraping it off in great flakes against the bushes and trees. This wool is easily gathered, and readily works up into a yarn that will compare favorably with that produced by the inferior breeds of sheep. This it will be seen is no inconsiderable item when we are told that each animal yields from 10 to 12 pounds of raw material. Many years ago there was in Winnipeg a cloth factory for the manufacture of Buffalo wool, and I understand that its operations were stopped only by the extirpation of the animals in the neighborhood of the town.

In one particular only is the Buffalo completely the inferior of its domesticated relative, and that is as a milker. But to the ranchmen this very item is of no consequence whatever.

Mr. Bedson has also experimented with crosses between the Buffalo and the common cattle: for the two species are perfectly interfertile in all degrees of hybridity. The hybrid animal is claimed to be a great improvement on both of its progenitors, as it is more docile and a better milker than the Buffalo, but retains its hardihood, whilst the robe is finer, darker and more even, and the general shape of the animal is improved by the reduction of the hump and increased proportion of the hind-quarters.

As the scheme of domestication is now fairly set forth as a commercial enterprise, and as its success is no longer considered problematic, it is unnecessary here to do more in the way of contending for the reasonableness and value of the experiment.

Order RODENTIA. Rodents.

Family SCIURIDÆ. Squirrels.

8.—WOODCHUCK OR GROUNDHOG. (*Arctomys monax* Linn).

Cree:—Wi-nusk. Ojib:—A-kuk-wä-djis.

Given by Richardson as ranging northward to latitude 61°. I secured a single specimen in the woods south of Carberry, in June, 1884. In 1885, my brother, Mr. A. S. Thompson, caught another at the same place, and a third was killed by Mr. Gordon Wright on his farm at Carberry. Mr. Hine has seen but two from the vicinity of Winnipeg, and considers the species extremely rare in Manitoba.

The Prairie Dog (*Cynomys ludovicianus*) may yet be found in the extreme south-west of the Province.

9.—CHIPMUNK (*Tamias striatus lysteri* Richardson).

Ojib:—A-gwin-gwisi.

At Rat Portage, according to Mr. Matheson, the H. B. Co's agent, this animal is abundant. At Winnipeg I was shown two skins, both taken in the

neighborhood, and was informed by Mr. Hine that the species is not uncommon. I find recorded also, one Red River Settlement specimen, collected by Dr. Evans, and four Pembina specimens collected by Dr. Coues. I found no trace of the species in the west of the Province. Mr. C. W. Nash informs me that both *striatus* and *asiaticus* are found at Portage La Prairie, but that the latter is the prevailing species there and throughout the Assiniboine Valley, and on the other hand *striatus* is predominant along Red River. The Portage La Prairie animal may prove to be *quadrivittatus*.

10.—NORTHERN CHIPMUNK. (*Tamias asiaticus borealis* Allen).

This variety of the Asiatic Chipmunk is the Common or Little Chipmunk of Manitoba. It is abundant in all the woods about Carberry, and along the Assiniboine where it crosses the high prairie region of Western Manitoba; but its occurrence about Winnipeg is not yet ascertained, although I find recorded two Nelson River specimens (*L. Gunn*), one Pembina specimen (Dr. Coues), and two Lake Superior specimens (*L. Agassiz*).

This species differs most perceptibly from the Eastern Chipmunk (*T. striatus*), in being much smaller and paler in color. Its habits are very similar to those of its larger cousin, but I think it is more active and somewhat gregarious. It has also a peculiarity of carrying its tail straight up over its back and spread to the greatest extent.

11.—GROUND SQUIRREL. (*Spermophilus richardsoni* Sabine.)

Ojib:—MI-sé-dji-di-mó. Largest Squirrel.

The Ground Squirrel, also known as the Yellow Gopher and Richardson's Spermophile, is probably the most abundant member of the family in Manitoba. It is usually found on heavy clay land only, and when a locality presents an unusual number of favorable characters the ground squirrels are likely to be found there in such numbers as to present the appearance of a colony, although I do not think that the species is sociable, in the true sense of the word.

This Gopher appears above ground in the spring before the snow is gone, this is before the reappearance of the Striped Gopher. The yellow species appears to be much less sensitive to cold, for my caged individuals were not affected by a temperature nearly down to the freezing point, though it put all of the striped species into a state of stupor. In the fall also the present species remains above ground about a fortnight longer than the *tridecemlineatus*.

Nearly all specimens of this species taken in May were found to be infested with worms. These parasites were usually in the stomach, the intestines and in the scrotum.

The voice of the species is a husky whistle and each time that the sound is produced the tail is raised in a very ludicrous manner. This whistle appears to be an alarm note only.

The cheek pouches of this ground squirrel are very well developed and enable it to carry a surprising amount of grain to its hole at a single journey. A very fine specimen which I took from a hawk on the 23rd May, 1884, weighed 13 oz., and its cheek pouches contained 240 grains of wheat and nearly 1000 grains of wild buckwheat. Another taken July 26th had in its pouches 162 grains of oats.

My notes on the breeding season are very brief and inconclusive, but such as they are they indicate that the young are born about the middle of May. They number sometimes as high as eleven. About the end of June they are half-grown and begin to show themselves outside of their burrows. The prairie about the burrows is now swarming with life and becomes a regular hunting ground for all sorts of predaceous birds and beasts.

Trapping these dull witted creatures does not require the exercise of much ingenuity, but one is so sure of success that the interest is sustained. I have myself caught over a dozen in an hour with only two traps. My plan was to go to some thriving colony in the heat of the afternoon at which time the proprietor of each burrow might be seen sunning himself on the mound at the entrance. I would walk gently towards one whereupon he would disappear. I would then set my trap and leave him. If approached hastily he would be too much alarmed to come out again for a long time, but by causing him no great trepidation his return and capture were usually assured within a few seconds. Sometimes a light weight squirrel would not spring the trap as he came out, in which case I had only to throw something at him and so make him rush for his hole when his heavier step would be the certain means of making him a prisoner. The trap never needed either bait or covering, as the little animals are so entirely without cunning that they will at once step on the pan. A simple circumstance will illustrate the superior mentalism of the Striped Gopher. If one walks close past one of the latter without looking at it, it watches his eye and does not stir, if, however, he turn about and face it, it disappears into its burrow. The Yellow Gopher, however, no matter how approached always runs into its hole with nervous haste as soon as it sees a foe in its vicinity.

When the two Gophers were kept in a cage together the striped species bullied its larger brother mercilessly and lost no opportunity of impressing him with the superiority of mind over matter.

12.—STRIPED GOPHER. (*Spermophilus tridecemlineatus* Mitchell.)

This Gopher is abundant all over the prairie regions of the Province where the soil is light and sandy. In the spring it begins to show itself above ground during the last week in April, and by the first week in May it is to be seen in abundance.

It is, I believe, strictly a diurnal animal and is so partial to warmth that it is not often seen above ground before the sun has attained considerable force, while on cold days is seldom seen at all.

Its voice is exercised in the production of a number of shrill, bird-like whistles and chirps. Notwithstanding its long slender body and curious markings, it is not a pretty animal, being entirely devoid of any weasel-like grace, while its harsh fur detracts from the effect of the alternate spots and stripes.

The burrows of this animal are of three kinds. First a labyrinth of galleries with many entrances, this I take to be a mere play ground. Second, the nesting burrows. The nest is usually a chamber some six inches below the surface, lined with fine grass. It is about nine inches in diameter, and is approached by many galleries and several entrances.

The third type of burrow goes nearly straight downwards for six, eight or even twelve feet. This is, I believe the winter residence; but at one time I

theorized that it was a well. However, I have kept many of the animals in a state of captivity, and now think that they are almost independent of any water supply. After keeping six Gophers without water for a week in hot weather, I offered them some in a saucer. Four paid no heed: two tasted, but immediately left it, and could hardly be said to have drank.

The young are born late in May, and usually number eight or nine. They are at first blind and naked, the skin being of a pale flesh color. One female that I kept in captivity brought forth her litter in time, but paid not the slightest heed to them, so that I failed of making more extensive observations on their development. I have no evidence to show that more than one litter is produced each season.

It is not to be described as a sociable species in any degree, as those that I kept in a cage never noticed each other except to fight, and in a state of nature I never saw two Gophers heeding each other's presence except in the breeding season.

If a Gopher on the prairie be not chased very fast, it will play with the observer, and lead him about in various directions. If, however, it be really pursued, it makes for shelter; under these circumstances, when suddenly it stops and looks at its pursuer, we know that it has arrived at its burrow and feels safe; and on being more nearly approached it dives down, often uttering a shrill chirrup as it disappears. But as the species is possessed of an uncontrollable curiosity it is sure to peep out again in a few seconds, if all be still and is then easily taken in a string noose previously placed over the hole.

It is a common sight to see a Gopher sitting perfectly still and bolt upright on one of the earth-mounds on the prairie. The animal's body is so long and it presses its fore paws so closely to its breast that under these circumstances it is often mistaken by the novice for a surveyor's stake, until a nearer approach on the part of the observer alarms the rodent and the supposed stake dives into the mound.

Although the species is supposed to be strictly terrestrial, Mr. Miller Christy and myself, twice observed a Gopher climb up a low spruce tree in pursuit of a Baywinged Bunting (*Pooecetes gramineus*) that was perched on the top.

My observations on the food of the species do not agree with the accepted accounts, as instead of being a vegetarian, I find that it is quite omnivorous, for in a state of nature, besides all sorts of fruits, vegetables and grains, I have known them to eat feathers, house scraps, offal, insects, small birds and their fallen comrades, while those that I kept caged invariably manifested a preference for raw meat over any vegetable substance I could offer them.

Though very sensitive to cold, gophers are very tenacious of life and several that I have known to have been trapped, bruised and thrown aside for dead, have revived and escaped. On one occasion I saw one revive and walk after it was partially skinned; another walked a few paces after it was disembowelled, while two of the foetal young lived for two days in a box before they were found and put out of pain. Besides being preyed on by numerous birds and mammals, prominent among which are the harriers, and buzzards, and the foxes and badgers, this species is much subject to the attacks of an intestinal worm during the early summer, and of a cuterebra during the latter part of the season.

This cuterebra is a fly which deposits its eggs on the body of the Gopher, when hatched the larva is developed under the skin of the rodent, and doubt-

less derives its subsistence from its unwilling host. The fly usually oviposits on the hinder quarters of the male animal and the grub appears, sometimes at least, to emasculate its victim. But I have often found females infested besides having seen the grub under the skin in various parts of the belly. On one occasion I found the grub in the cheek of its victim, and once I found two cuterebrae in the same Gopher. The parasite is usually observed in August, the earliest found being on July 26th, the latest September 4th. During the period from August 3rd to September 4th, 1884, I caught at intervals 29 Gophers. Of these 14 carried the larval parasites, and out of the 14, 8 were females. The larva appears to leave the Gopher in September. Its history is being worked out by Dr. Brodie and myself.

During the latter part of August and the early part of September the Gophers are seen continually running into their burrows, with cheeks distended either with grass or grain. As the days grow colder they come out less often, and by October are no more seen, but henceforth continue in darkness until the return of spring again calls them into active life.

13.—SCRUB GOPHER OR GRAY CHEEKED SPERMOPHILE. (*Spermophilus franklini* Sabine.)

This Spermophile does not appear to be abundant anywhere, though it is of general distribution in all the wooded or scrubby parts of the western half of the province, as I have noted its occurrence throughout the region about Carberry, and westward and northward to Fort Pelly. According to Mr. Hine it is quite abundant about Minnedosa. Its habits bear some resemblance to those of the Striped Gopher, but also have much in common with those of the Chipmunk.

14.—RED SQUIRREL. (*Sciurus hudsonius* Pallas.)

Cree:—A-dji-dä-mö'. Ojib:—A-dji-dä-mö'—Running head downwards.

Common in all the woods along the Assiniboine River and also exceedingly abundant about Rat Portage, where it finds a ready means of subsistence in the bountiful supply of cones of the Jack or Banksian Pine.

15.—FLYING SQUIRREL. (*Sciuropterus volucella hudsonius* Gmelin.)

Cree:—Ca-ka-skän'-dü-wë-o. Ojib:—Ca-ka-skän'-dü-wë. ::Lying flat.

In a hollow tree near Carberry, I once found nine of this species: in October, 1886, I shot another specimen. At Winnipeg I saw five specimens and was informed by Mr. Hine that it is quite common. At Rat Portage I secured one, and was informed that it was by no means rare.

Family CASTORIDÆ. Beavers.

16.—BEAVER. (*Castor fiber canadensis* Kuhl.)

Cree:—A-misk'. Ojib:—A-mik'.

Becoming very rare except in the northern parts of the province. The dams are numerous in many localities, and attest the former abundance of the animal. These structures are not invariably built in a scientific crescent form

as a pleasing and widespread, but unsound theory would have us believe. I usually found that the dam was built at the most convenient part of the selected stream, and zigzagged across, so as to take advantage of every tree or willow clump that lay any way near to its general course.

Mr. Hine showed me beavers from Whitemouth and from Brokenhead River. One from the latter place was quite the largest beaver I ever saw, as it turned the scale at 54 lbs. avoirdupois.

Family MURIDÆ. Mice.

17.—MUSKRAT. (*Fiber zibethicus* Linn.)

Cree:—Wās-ūsk'. Ojib:—Wa-jūsk'.

Very abundant throughout the country. Late in the summer it is often found in curious places quite remote from any water. On June 30, 1882, my brother found a nest of young helpless muskrats in one of the houses.

The average weight of eight specimens taken at Carberry in November was 1 lb., 11 5-16 oz. av. The heaviest, a male, weighed 2 lb., 4 oz.

18.—RED-BACKED MOUSE. (*Evotomys rutilus gapperi* Vigors.)

Tolerably common on the Big Plain. For September, 2, 1884. I find the following note in my diary: "Caught a female Red-backed Mouse, evidently at the point of bringing forth young."

Kennicott collected four specimens along Red River; and at Rat Portage in October, 1886, I procured one. Doubtless it is found throughout the country.

Cooper's Mouse (*Synaptomys cooperi* of Baird), is to be looked for, as it is found in Minnesota and in Alaska.

19.—COMMON MEADOW MOUSE. (*Arvicola riparius* Ord.)

Cree:—Wa-wa-bi-gā-not'-si. Ojib:—A-mi-kō-wa-wa-bi-gā-not-si.=beaver mouse. The name common to both Indian tongues, means 'short-tailed, field mouse' in a general sense. When the Ojibbway was asked for a fuller explanation of the name he replied: "Know nothing, very foolish, act like children and steal."

This species is very common on the Big Plain, especially in and about the fields of grain, although it is quite omnivorous in its proclivities. It is remarkably prolific, producing several litters each season; even in the late fall, gravid females and nests of young were commonly found.

The small variety (*borealis*) is accredited to the region of which Manitoba forms a part.

A number of specimens taken by Gunn and Kennicott along the Red River are said by Coues to be remarkable in their indeterminate character. They may prove to represent merely a large race of *A. riparius* or else a dull colored race of the Chestnut-Cheeked Meadow Mouse (*A. xanthognathus*).

The Prairie Meadow Mouse (*Arvicola austerus* Le Conte) may occur in Manitoba.

20.—MISSOURI MOLE MOUSE. (*Hesperomys leucogaster* Maximilian.)

This large *Hesperomys* was found by Audubon and Bachman at the junction of the Yellowstone with the Missouri; by Dr. McChesney at Forts Sisseton, and Berthold in Dakota; and by Dr. Coues in the Red River Valley, along the 49th parallel. Hence its occurrence in southern Manitoba is probable.

21.—WHITE-FOOTED OR DEER MOUSE. (*Hesperomys leucopus sonoriensis* Le Conte.)

This variety of the Deer Mouse is abundant about the Big Plain, even on the open prairie in places far removed from timber. It often takes up its abode in dwellings much after the fashion of the house mouse.

22.—MICHIGAN MOUSE. (*Hesperomys michiganensis* Audubon and Bachman.)

Three specimens of this species have been found among the mice procured by me at Carberry. One was caught near an old straw stack on the prairie in November, 1886.

23.—COMMON HOUSE MOUSE. (*Mus musculus* Linn.)

Recently imported; not observed at Carberry until the fall of 1884; in 1886 it was abundant there and was rapidly replacing the Deer Mouse as a domestic nuisance. I also found the species only too plentiful at Rat Portage in October, 1886.

24.—BROWN OR HOUSE RAT. (*Mus decumanus* Pallas.)

I am told that the ubiquitous House Rat has been imported recently but I never saw a specimen.

Family GEOMYIDÆ. Pocket Gophers.

25.—POCKET MOUSE. (*Thomomys talpoides* Richardson.)

This species appears to be generally and abundantly diffused throughout the western half of the Province, where groups of the mounds that it throws up from its burrows are among the most familiar variations of the prairie level.

The earliest seasonal record that I have for the species is as follows: "April 12, 1883, snowy owl shot by Mr. Arthur S. Thompson, and brought to me, had in its claws a pocket mouse, whose pouches were full of roots."

Mr. Miller Christy writes me from Western Manitoba, as follows: "May 5, 1887. Found a nest of the Horned Owl (*Bubo virginianus*) in a poplar tree on the prairie. Besides the two fledgling owls, it contained the remains of 20 Pocket Mice in various stages of decay." The above is all the evidence I can give to show that the animal ever appears above ground. When I first essayed to trap the Pocket Mouse I was much puzzled to find the hole in the earth mound, as each fresh load of soil,

on being pushed up from below, displaces the previous one, and in its turn plugs the hole. Experience at length taught me that the entrance to the burrow is usually at the edge of the hillock, and may be found by probing with a twig. It slopes downwards at an angle, away from the centre of the mound until at a depth of about eight inches it strikes the burrow, which is a horizontal tunnel nearly three inches in diameter. On following this tunnel, it will be found that all the adjacent mounds are the work of a single mouse, and are upheaved from one long ramified runway, that constitutes the excavator's home and base of operations.

In May I commonly found that each of these labyrinths contained a male and a female, but after the breeding season, each was found with a single occupant only.

In September the young ones are nearly full grown, and scatter from their first home, each beginning life by burrowing for itself. At this time the size of a Pocket Mouse may be fairly estimated from the size and number of its mounds.

It is readily taken in a common steel trap, which must be placed upright in the burrow, so that the mouse coming with a load will shove against the plate, for if the trap were laid flat the earth would be pushed under the plate, and the mouse pass unharmed. All that I took were held either by the muzzle or the fore leg.

When caught it hisses or utters a snarling like a small dog. These are the only sounds I have heard this rodent produce.

It has been said that the cheek pouches are employed to carry earth from the burrow, but all the evidence I have been able to gather goes to show that they are never used for any other purpose than the conveyance of provisions.

I suppose that the species hibernates, for a time at least, but noticed that it did not cease burrowing until compelled by the frost, and often I have seen the mounds of black earth, thrown up, under and through the new fallen snow.



No. 5.—Head and tail of Pocket Mouse.
Life size, from a large female specimen captured at Carberry, November 16, 1886.

Family ZAPODIDÆ. Jumping Mice.

26.—JUMPING MOUSE. (*Zapus hudsonius* Zimmerman.)

Ojib:—Kwac-kwac-kwut-ta-bi-ga-nöt-si.=Jumping Mouse.

This curious animal, readily distinguishable by the immense length of its tail, is quite common along the Assiniboine, especially in scrubby places. When startled I have seen it leap up on some very low horizontal limb, whence it would survey the intruder, before retreating with the remarkable jumping

action for which it is celebrated. It is now a well established fact that the female will carry her young about, each being firmly attached by its mouth to one of her mammary nipples.

Several specimens were found drowned under circumstances which would argue the entire absence of natatory powers in the species, notwithstanding the conspicuous webbing of the hind feet.

Family HYSTRICIDÆ. Porcupines.

27.—PORCUPINE (*Erethizon*.)

[Without specimens for actual examination it is impossible to say whether the Porcupine here referred to is *E. dorsatus* Linn., or *E. epizanthus* Brandt. Possibly both occur in Manitoba.—C.H.M.]

Ojib :—Kak.

In Winnipeg market I saw two specimens that were brought from Lake Winnipeg. Mr. Hine showed me two specimens which were brought from Bird's Hill, north of Winnipeg City, in which locality it is somewhat common. Mr. Matheson informs me of the occurrence of the species at Rat Portage.

Family LEPORIDÆ. Hares.

28.—VARYING HARE OR WHITE RABBIT. (*Lepus americanus* Erxleben.)

Cree :—Wa-pus'. Ojib :—Wa-büs'.

This is the common rabbit of Manitoba and throughout the whole Province it exists in such numbers as to entitle it to the name of being our most abundant mammal.

Many observers have remarked that during some years it is exceedingly numerous, and in others it is comparatively rare. It is said to go on multiplying for six or seven successive years, and then at length an epidemic disease regularly appears and almost exterminates the species. If this be true there can be but little doubt that 1887 is about the last year of the series of increase as the rabbits have multiplied to such an extent as to cause uneasiness to many persons, who are aware of the trouble a kindred species has caused in Australia. In the fall of 1886 the woods about Carberry so abounded with the species that killing them ceased to be a sport. I do not think I exaggerate in saying, that during the month of October I could on any one day have killed a hundred rabbits with one gun. With a view to giving a tangible illustration I stood at one time and counted those that I might have shot without leaving my place, and they numbered thirteen. At another time, I counted six, all within a space twenty feet square. I have specified the month of October, because by an apparent seasonal miscalculation, the rabbits were then more or less white, although the snow did not come until late in November. Certainly there had been a slight fall early in the month, but not sufficient to whiten the ground and it disappeared soon after the sun arose. Thenceforth through October and part of November the weather continued bright and summer-like, and the unfortunate rabbits, in their unseasonable garb, were seen skipping silently about like ghosts, among the brown copses and bluffs of the prairie.

In making the change the largest and most robust individuals are always in advance of their smaller or sickly relatives. Out of 40 examined by me at Winnipeg on October 26, five only were whitening on the body, and these five were conspicuous for their superior size and weight. On the other hand, even after the species in general were pure white I found a few puny individuals in an intermediate state of color.

During the summer the species is much subject to the attacks of the parasitic tick—*Ixodes boris*, numbers of which may often be seen hanging on the throat and neck of the luckless rodent.

I have not yet found the nest of this Hare, the nearest approach to it being a young one nestled among the leaves under a brush pile. When I seized it it squealed lustily and very soon the mother appeared in response to the cry of her young one. This was in June, 1883. On April 10, I shot a female and found two very small foeti on dissection.

At Winnipeg in October, 1886, Mr. Hine showed me an apparent albinism of this species. It was a half-grown specimen in summer pelage; instead of the usual dark brown color, it was of a pale buff above, and its eyes, as usual with such 'freaks of nature' were clear pink. It was shot near Winnipeg.

29.—PRAIRIE HARE. (*Lepus campestris* Bachman.)

I have been informed by several travellers that this large hare is found on the Souris plains. Mr. Miller Christy observed it near Fort Ellice, and Mr. Geo. F. Guernsey reports it as common near Fort Qu'Appelle. According to Richardson: "It is a common animal on the plains through which the North and South branches of the Saskatchewan flow, and which extend as far eastward as the Winnipegoosis and southern extremity of Winnipeg-Lake, and to the southward unite with the plains of the Missouri, where this hare is also found, as well as on the great plains of the Columbia river. . . . It frequents the open plains, where it lives much after the solitary manner of the common European hare, without burrowing."

Mr. C. W. Nash informs me that a specimen was shot near Mountain City in South Manitoba, March, 1887. "It weighed over 8 lbs."

Order CHIROPTERA. Bats.

Family VESPERTILIONIDÆ. True Bats.

30.—HOARY BAT. (*Atalapha cinerea* Beauvois.)

Apparently not uncommon, as I took several specimens in the vicinity of Carberry.

In the museum of the Historical Society at Winnipeg is a female specimen, apparently of this species, and clinging to her breast are two half-grown young ones.

31.—BROWN BAT. (*Vesperugo serotinus fuscus* Beauvois.)

Cree:—Pi-kwâ-na-dji. (Generic term.) Ojib:—A-pé-kwa-na-dji. (Generic term.)

This bat was collected at Lake Winnipeg by Robert Kennicot.

The Little Brown Bat (*Vespertilio subulatus*), and the Silver-haired Bat (*Vesperugo noctirayans*) are likely to be found in Manitoba, together with two or three other species.

Order INSECTIVORA. Insectivores.

Family SORICIDÆ. Shrews.

32.—MARSH SHREW. (*Neosorex palustris* Richardson.)

At Carberry I captured a large long-tailed Shrew, which was identified as above by Mr. J. A. Allen.

33.—FORSTER'S SHREW. (*Sorex forsteri* Richardson.)

This species seems to be common in Manitoba. Several specimens were taken.

34.—LITTLE SHREW; COOPER'S SHREW. (*Sorex personatus* Geoffroy.)

At Carberry I procured several specimens of this Shrew. It is the most common species, being quite abundant in the long grass along the slough sides. In the late winter and early spring it is often seen running over the surface of the snow. All that I trapped were taken in jars sunken in runways, which I made by removing a fallen pole or log in the long grass.

35.—SHORT-TAILED SHREW. (*Blarina brevicauda* Say.)

Ojib:—Kin'-ski-cä-wa-wa-bi-ga-not'-si. (A generic term meaning, 'sharp-nosed, short tailed field mouse.')

I found this Shrew quite plentiful in marshy places about Rat Portage, Lake of the Woods) in October, 1886. I set a number of spring mouse traps and a few jars sunken in the runways, and though I caught nearly a dozen specimens in the traps, I failed to take any in the jars. The case was precisely reversed with the field mice (*Arriculæ*), which abounded in the same marsh.

Family TALPIDÆ. Moles.

36.—STAR-NOSED MOLE. (*Condylura cristata* Linn.)

Mr. Hine informs me that he has seen specimens of this mole taken within our Province.

Order CARNIVORA. Flesh Eaters.

Family URSIDÆ. Bears.

37.—BLACK BEAR. (*Ursus americanus* Pallas.)

Cree:—Skit-té-müs-kwa'=Black Bear. Sau-wis-müs-kwa'=Yellow or Brown Bear.

Ojib:—Mä-kë-té më-kwa=Black Bear.

Tolerably common throughout the country in broken or wooded sections.

Family PROCYONIDÆ. Raccoons.

38.—RACCOON. (*Procyon lotor* Linn.)

Cree:—Ēs-si-bän'. Ojib:—Ēs'-si-pän

According to Richardson, this animal is found north to latitude 50° on the Red River, "from which quarter about 100 skins are procured annually by the Hudson's Bay Company." The largest and blackest coon skin that I ever saw was also the only one that I knew of being taken on the Upper Assiniboine.

Family MUSTELIDÆ Weasels.

39.—OTTER. (*Entra-canadensis* Turton.)

Cree:—Ni-gik'. Ojib:—Ni-gik'.

Apparently of general distribution, though exceedingly rare in the South and West.

40.—SKUNK. (*Mephitis mephitica* Shaw.)

Cree:—Ci-kak'. Ojib:—Ci-kak'.

Abundant throughout the Province. In Eastern America this animal, by virtue of its peculiar mode of defence, has so long enjoyed immunity from nearly every kind of attack that it will rarely retreat when it meets a probable enemy. In Manitoba, however, perhaps because the Indians made a practice of killing it for food; it acts very differently, for in 12 cases out of 13, of which I have notes, the skunk made off at his best pace, as soon as he saw me approach. The exceptional case occurred after the first snow so that probably this individual was lethargic. On one occasion the animal took to a lake and swam nearly two hundred yards before it shewed signs of distress. It is not usual to credit the skunk with aquatic propensities, but at another time I saw six skunks that were of their own free-will dabbling in the mud and water by the shore of a pond, and the following additional evidence will show that these are not exceptional cases: Mr. Miller Christy, in a paper published in the *Natural History Journal*, says of the present species: "One evening last June I assisted in the extermination of a family party, consisting of one old one and six young ones, which were taking a bath at the edge of a lake. The skunk seems to be fond of the water, as on another occasion I remember shooting one from a boat as he was bathing."

The late Mr. W. G. A. Brodie informed me that once near Toronto, when his dog had discovered a skunk, the latter availed itself of the first opportunity to rush into the Don River, some fifty yards away. The dog followed, and after a prolonged and partly sub-aqueous struggle the skunk floated up dead, and the dog returned to the shore perfumed in the usual way.

41.—BADGER. (*Taxidea americana* Boddaert.)

Cree:—Mi-téa-usk'. Ojib:—Mi-tén-üsök'.

An abundant species in the prairie regions of the south and west. The flesh diet of this omnivorous animal is, I believe, composed chiefly of gophers. I have frequently seen places where a Badger, guided apparently by scent, had dug down from twenty to thirty holes at intervals, so as to strike the surface burrow of some gopher, with a view to intercepting the little miner, and the evidence usually went to show that ultimately the rodent fell a victim to its indefatigable foe.

The great strength of the Badger is attested by the fact that if seized by the tail just as it is disappearing into its hole it will brace itself with its fore feet and bid defiance to all the force of a strong man. One which was so seized I tried to dislodge by pouring water down the hole, but it swelled out its body and so filled the hole that no water got past it until after a passage had been made by the insertion of a pole.

In the fall of 1884, I saw a great many badger tracks, and new earths after the first snow had fallen. In hopes of finding a specimen "denned up"

or the winter I dug to the bottom of several burrows, but in each case with the same results. The burrows all went down about six feet, and where they terminated was unmistakable evidence that the Badger had dug down in search of some dormant gopher, whose hoard of grain was in each case left scattered about in the earth and all of it more or less sprouted.

Mr. Matheson, the H. B. Co's agent at Rat Portage, informs me that they received a Badger skin from a point 50 miles north of Lake of the Woods.



42.—WOLVERINE. (*Gulo luscus* Linn.)

Cree:—KwIn-kwa-har-gé-o. Ojib:—KwIn-go-ar'-ge.

The Wolverine is very rare in Manitoba, and the evidence that it now occurs at all along the lower Assiniboine is not by any means conclusive. It is, however, not uncommon in the north and east. I am informed by Mr. Wm. Clark that in 1872, 1,200 skins of this species were brought by the Hudson Bay Co. from the Peace River region, and in 1882, 1,300 from the same territory.

43.—MINK. (*Putorius vison* Brisson.)

Cree:—Säng-gwís'. Ojib:—Cang-gwës'-ce.

This is a plentiful species throughout the province, especially along the rivers and creeks. During the winter it appears to abandon the aquatic life it leads in the summer and often makes its winter quarters among the farmer's outbuildings, where its presence is soon manifested by the nightly decrease in the number of poultry.

I once saw a place where a Mink had slid after the manner of an otter for 18 feet down a hill.

One which was encountered on the open prairie showed very poor running powers, but managed to save itself by dodging until at length it escaped into a badger hole. Another which I met in the open prairie stood bolt upright on its hind legs and continued to regard me so until I approached within ten feet and blew the top of its head off with a charge of small shot.

The species is very heedless of a trap; as the following circumstance will show. A mink taken in one of my traps freed itself by gnawing off the imprisoned limb. Shortly afterwards I found in the same trap a mink that had but three legs, the fourth having been but recently amputated. It was, I believe, the same animal. When found it was dead. It had buried itself all but the head and one fore paw in a large mass composed of all the sticks, grass and earth that it could gather within the length of the chain.

On June 28, 1883, I found a young mink under a log in a piece of dry woods near Carberry. It was uttering a short querulous cry and it was this that first led me to the spot, where I found it on a very rough bed of dry leaves. I took it home with me and as it was blind and helpless, gave it to the cat, that she might nurse it along with a newly arrived litter of kittens. The cat treated it kindly and the mink at once applied itself to the usual founts of infantile sustenance, but after having satisfied its hunger, it began to smell its nest mates and immediately concluded that it was right and proper for it to try to kill them. Its expression of face (though it was still blind), and the energy and evident good-will with which it set about the task were something devilish to contemplate. Its strength, however, proved unequal to its will, so I did not interfere, until I found that each day after having been suck-

ned it would endeavor to destroy its foster-mother. On the 30th its eyes were opened and shortly afterwards I was horrified to find that though indeed it could not kill its benefactor it had torn and lacerated her belly in a terrible manner and had actually gnawed off nearly all of her teats. Ingratitude could go no further, and deeply regretting that I had tried what had proved so cruel an experiment, I put a speedy end to the life of the diabolical little brute.

44.—LEAST WEASEL (*Putorius vulgaris* Linn.)

Richardson ascribes to the Least Weasel a range which includes Manitoba, and Mr. Hine informs me that he has seen specimens taken within our province. I never saw a specimen myself.

45.—COMMON WEASEL OR ERMINE (*Putorius ermineus* Linn.)

Cree:—Cing-gwus'. Ojib:—Cing-gwus'.

This Weasel is a plentiful species in the woods along the Assiniboine, though unfortunately I did not procure enough specimens to fully elucidate its taxonomic status. A male in full winter pelage, taken at Carberry, Dec. 4, 1886, answers nearly, according to Dr. Merriam, the description of Baird's *longicauda*, but its skull is in some respects intermediate between *longicauda* and *ermineus*.

I have captured this species in the tunnels of the Pocket Mouse, and have also seen it in pursuit of the White Hare. In the poultry-house also it is occasionally found, slaying its dozens in a single night, so that its disposition is much the same in Manitoba as elsewhere.

In the fall of 1886 I saw a specimen in the purest white pelage, several days before the snow came.

46.—FISHER OR PEKAN. (*Mustela pennanti* Erxleben.)

Cree:—U-djig'. Ojib:—Ü-djig'.

Very rare in the Assiniboine valley but not uncommon in the wooded region about the large lakes. Noted also at Rat Portage.

47.—MARTEN OR AMERICAN SABLE. (*Mustela americanus* Turton.)

Cree:—Wa-pi-stan'. Ojib:—Wa-bi-jé-shé.

The only Marten skins that I examined were brought from the woods about the large lakes, where the species is rather common.

Family CANIDÆ. Dogs.

48.—KIT FOX. (*Vulpes velox* Say.)

According to Dr. Coues, this little fox is common along the Souris River at the boundary. Richardson states that it "burrows in the open plains from the Saskatchewan to the Missouri."

A full grown specimen which was sent to me from Medicine Hat weighed but $4\frac{1}{4}$ lbs., being no larger than a good-sized domestic cat.

49.—COMMON FOX (*Vulpes vulpes* Desmarest.)

Cree:—Wa-kus. Ojib:—Wa-güe.

Abundant throughout the Province. A fox when detected on the black burnt prairie is always much more frightened than when in the dry yellow grass.

An individual that escaped with a trap on his foot, though not alarmed by pursuit, went down every badger-hole he came to, in hopes apparently of leaving the trap behind.

The Cross and Silver Foxes are mere color varieties of this species. Specimens of the former were noted at Winnipeg and at Rat Portage.

50.—GRAY WOLF OR TIMBER WOLF. (*Canis lupus griseo-albus* Sabine.)

Cree:—Me-hil-gün. Ojib:—Mai-In-gün.

Now exceedingly rare if not quite exterminated along the Assiniboine although it is not uncommon about Lake Winnipeg.

"The American wolf burrows and brings forth its young in earths with several outlets like those of a fox. I saw some of these burrows on the plains of the Saskatchewan and also on the banks of the Coppermine river. The number of young in the litter varies from 4 or 5 to 8 or 9."—Richardson.

Mr. Gordon Wright, of Carberry, informs me, that in Ontario he once found a litter of young of this species in a hollow log.

51.—PRAIRIE WOLF OR COYOTE. (*Canis latrans* Say.)

Cree:—Mes-tca-tca-gün-is.

Common in the prairie regions, although seldom seen in the summer.

I have had many opportunities for observing this animal, but can add very little to what is already known of it. It readily crosses with the dog, and the two species appears to be interfertile in all degrees of hybridity. Half-breeds shown me by Mr. Bedson, of Stony Mountain, partook equally of the characters of both parents. By means of a telescope I have often watched this animal when far off on the prairie, and have so been able to note its habits when not at all alarmed by the proximity of its greatest foe. I never saw any signs of gregariousness in the species, at least during the day time. It is remarkably wary, and soon detects the presence of any but the most carefully concealed of traps. I found that all such artifices as the use of oils of aniseed or rhodium, or asafoetida, was worse than useless; the only effect of these odors is to make the animal more suspicious.

I have often observed the use to which the great bushy tail is put. In lying down for a nap, the four feet and nose of the animal, the only exposed parts, are all brought together, and the brush laid over and around them by way of a wrap. This is so invariably done that I believe a wolf would die in the winter if deprived of its tail.

The dogs, which are such a conspicuous feature of every Indian camp; are probably the domesticated descendants of this wolf, although the size and general appearance of some seem also to point out the Timber Wolf as their ancestor.

Family FELIDÆ. Cats.

52.—CANADA LYNX. (*Lynx canadensis* Desmarest.)

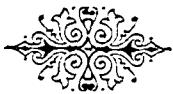
Cree :—Pi-cu'. Ojib :—Pi-cu'.



No. 6. Upper figure, tail of *Lynx canadensis*. Lower, tail of *Lynx rufus*. Both from the District of Muskoka, and one-quarter of life size.

Somewhat common in wooded districts, and increasing with the increase of the hares. Since the White Hare is usually considered as the principal food of the Lynx, these two circumstances may be viewed as cause and effect.

I have been told that the Wild Cat, or Bay Lynx (*Lynx rufus*), occurs in our Province, but I have not seen a Manitoban specimen and think that it had better be omitted, as it is so commonly confounded with the Canada species. It differs from the latter most tangibly in being smaller, darker, more heavily marked, and in having the tip of the tail black above and whitish below; in *canadensis* the whole tip, above and below, is black.



ERRATUM.

Page 5, 39th line: for "saribou," read "caribou."

Page 12, 14th line: for "occurence," read "occurrence."

Page 20, 14th line: for "too," read "two."